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# The Effect of Positive Self-Talk on Self-Efficacy and Memory Recall

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**The Effect of Positive Self-talk on Self-Efficacy and Memory Recall**

Harding University

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**Abstract**

Research has been conducted that has found a link between self-efficacy and performance, as well as connections between self-efficacy and self-talk. However, a gap exists in the literature in regard to the relationship between self-talk, self-efficacy, and performance, particularly in regard to cognitive performance. To address this gap, 42 students at a private liberal arts university practiced self-talk; and we assessed both their memory self-efficacy levels and their ability to recall information. The results of the experiment concluded that individuals with high self-efficacy that are exposed to positive self-talk experience significantly worse memory recall than individuals with low self-efficacy that are exposed to positive self-talk and individuals with high self-efficacy that are exposed to neutral self-talk.

*Keywords:* self-talk, self-efficacy, memory recall

**The Effect of Positive Self-talk on Self-Efficacy and Short-Term Memory**

Many students in higher education experience issues with self-esteem and self-image, especially in academics. Over half of all college students will at some point suffer from low self-esteem (Maheswari & Maheswari, 2016). Self-efficacy, a major component of self-esteem, is defined as an individual's belief in their own ability to complete tasks and execute behaviors that lead to a desired outcome. A link exists between both self-talk and self-efficacy and self-efficacy and academic performance. Given the nature of these relationships, the current study explored the potential relationship between positive self-talk and academic performance (i.e., memory recall).

### **Literature Review**

#### **Self-Talk and Self-Efficacy**

While the idea that speaking self-confidence into existence is effective may seem far-fetched, the idea may have merit. Self-talk originates based on linguistic patterns of interpersonal communication. When the mental and social cues usually reserved for interactions with others are applied to oneself, then key social phenomena can be applied to the individual (Geurts, 2018). The most important of these is commitment forming. If language serves as a way of negotiating commitments between two individuals, then self-talk can act as a method to form commitments with oneself. The self-commitments formed by positive self-talk act as a sort of mental incentive to improve overall performance and achieve success, in order to achieve commitment consistency. The mental processes that would motivate one to uphold a commitment if they tell a friend they will accompany them to the gym also motivate individuals to do better. Because individuals have formed these internal commitments with themselves, they

then believe that they can perform better at certain tasks, in order to avoid cognitive dissonance. This results in improved feelings of self-efficacy.

The power of self-talk can also serve to help an individual stay focused on a task, even when faced with distracting environmental stimuli. People that actively practice self-talk while performing computer-based tasks in a distracting environment are more focused and perform significantly better than counterparts that remain silent (Galanis, Hatzigeorgiadis, & Comoutos, 2018). The commitment made by self-talk provides an incentive for the participants to maintain focus in order to stay consistent. This in turn serves to reduce negative environmental effects. Finally, research suggests that self-talk can even reduce the effects of traumatic brain injuries (Yuen, 1997). Traumatic Brain Injuries (TBIs) can result in dramatically hampered cognitive and social functioning and can even cause reduced memory capabilities. However, through regular repetitions of positive statements of confirmation, patients can eventually integrate these statements into their social skill set, significantly improving social skills and cognitive processing.

### **Self-Efficacy and Performance**

The notion that increases in self-efficacy can lead to increases in performance is well established in psychological literature. In academic settings, increases in self-efficacy have been linked to improved engagement in the classroom and overall increases in academic success, while low self-efficacy has been found to lead to feelings of burnout and reduced performance. More confident students (i.e., students with higher self-efficacy scores) engage more with teachers and display more persistence when encountering obstacles in an academic setting. However, attempts at increasing feelings of self-efficacy do not seem to be able to mediate

significant feelings of academic burnout (Maricutoiu & Sulea, 2019). Furthermore, while self-efficacy has been found to be strongly correlated with increased levels of academic performance, particularly in regard to mathematics scores, it does not always serve as a reliable predictor when considering individual developments (Soland, 2019). This information would seem to demonstrate that there is a strong correlation between self-efficacy and academic performance. However, there is a gap in the literature in determining whether a causal relationship may exist between the two.

In addition to being correlated to academic performance, feelings of self-efficacy are also linked to increased professional performance and cognitive performance. Dror and Michael (2019) found that communication self-efficacy acted as a strong mediator for care attitude and empathy towards patients, meaning that medical professionals who were more confident in their ability to communicate, better communicated with their patients and were more empathetic towards them. Additionally, higher feelings of Memory Self-Efficacy (MSE) are strongly correlated with increased performance in memory tasks in older adults, while lower feelings of MSE are linked to worrying, decreased performance in memory tasks, and, in extreme cases, abandonment of tasks before completion (Beaudoin & Desrichard, 2017; 2018). One's performance on both academic and physical tasks, as well as the amount of energy one will put into the task, is heavily dependent on whether one perceives that they possess the skills to accomplish them. Self-efficacy plays a major role in both the duration and quality of mental and physical processes.

## **Methods**

## Participants

The participants in this study were a convenience sample of 42 students from a private, liberal arts university in the southern United States (72.6% female). Further demographic data can be found in Table 1. Participants were compensated with extra credit in a summer course with their instructor's approval.

**Table 1**

### *Demographic Characteristics of Participants*

| Classification | Male <i>n</i> = 10    |                       |                          |                       | Female <i>n</i> = 32  |                       |                          |                       | Total<br><i>n</i> (%) |
|----------------|-----------------------|-----------------------|--------------------------|-----------------------|-----------------------|-----------------------|--------------------------|-----------------------|-----------------------|
|                | White<br><i>n</i> (%) | Asian<br><i>n</i> (%) | Hispanic<br><i>n</i> (%) | Other<br><i>n</i> (%) | White<br><i>n</i> (%) | Asian<br><i>n</i> (%) | Hispanic<br><i>n</i> (%) | Other<br><i>n</i> (%) |                       |
| Freshman       | 2 (50)                | 0 (0)                 | 0 (0)                    | 0 (0)                 | 1(25)                 | 1(25)                 | 0 (0)                    | 0 (0)                 | 4 (100)               |
| Sophomore      | 3 (30)                | 0 (0)                 | 0 (0)                    | 0 (0)                 | 7(70)                 | 0 (0)                 | 0 (0)                    | 0 (0)                 | 10 (100)              |
| Junior         | 0 (0)                 | 0 (0)                 | 0 (0)                    | 0 (0)                 | 11(91.7)              | 0 (0)                 | 1(8.3)                   | 0 (0)                 | 12 (100)              |
| Senior         | 3(18.8)               | 0 (0)                 | 0 (0)                    | 2(12.5)               | 9(56.3)               | 1 (6.3)               | 1(6.3)                   | 0 (0)                 | 16 (100)              |

## Instruments

The materials used in this experiment consisted of a shortened, modified version of the Memory Self-Efficacy Questionnaire (Appendix A;), a list of five positive statements concerning the self (Appendix B) and five neutral statements (Appendix C), a reading passage taken from a GRE practice exam (Appendix D), and a cloze test based on the preceding reading passage (Appendix E).

### *Memory Self-Efficacy Questionnaire*

Developed in 1983 at the University of Florida by Dr. Robin West, the MSEQ is used to assess participants' belief in their ability to complete memory-based tasks and to remember items from a list. (An example item would be phrased, "If asked to, I could remember 2 numbers from a list of 12," with the underlined number increasing by increments of two). Participants are asked to rate their confidence on a scale from 0% to 100%, in increments of ten. Research has shown acceptable psychometric properties for this instrument ( $r=.92$ ,  $\lambda=.52$ ).

### *Cloze Test*

The cloze test takes the preceding reading passage and removes particular words, leaving blanks in their place. Participants are given the passage with the blanks and asked to recall the missing words. For example, a passage with the sentence "John Doe went to the store" would read "BLANK went to the store." For the purpose of this experiment, the words removed for the cloze test will mostly be proper nouns. This will ensure that correct responses are due to participants being able to recall the details of the passage from memory, rather than inferring the missing word due to context clues.

### **Procedures**

This experiment was conducted using a posttest-only randomized control group design. Participants were randomly assigned to either the "Positive Statement" group or the "Neutral Statement" group, with the treatment group alternating with each participant. Each participant was given a link to a Google Form, as well as a PDF of an Informed Consent form via email. Upon accessing the Google Form, participants were asked to adhere to all time restraints during the course of the experiment, as well as to not return to any previous sections after they had moved on from them. Demographic data concerning gender, ethnicity, and classification were



collected. Participants were then given a sample GRE reading passage, told to read and study it for five minutes, and then advised that they would be quizzed on the contents of the passage later. After five minutes elapsed, participants were then asked to read a list of either positive or neutral “I am” statements to themselves for one minute, returning to the beginning of the list if they read all statements before the minute had passed. They were then administered the Memory Self-Efficacy Questionnaire (MSEQ) via the Google Form. Upon completion of the questionnaire, the cloze test was administered to test the participants’ memory of the reading passage. After the conclusion of the experiment, all participants were briefly debriefed on the purpose of the experiment and its various elements and were given contact information to address any potential questions or concerns.

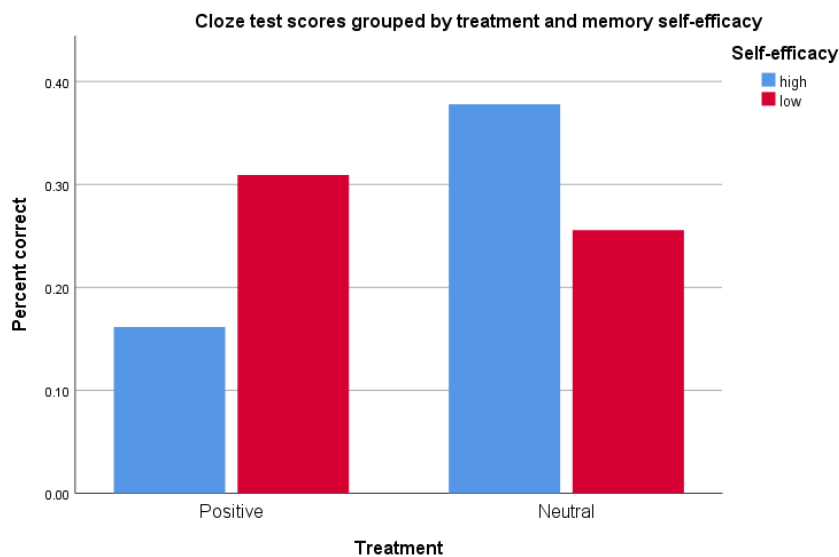
## Results

Initial analysis utilized an independent sample t-test to determine whether a significant difference in mean MSEQ scores existed between self-talk groups. Analysis found that no such difference existed between the positive ( $M = 75.5\%$ ) and neutral ( $M = 71.1\%$ ) self-talk groups ( $p = 0.294$ ). Additionally, an independent sample t-test was used to assess whether a difference existed in memory recall abilities between the positive and neutral self-talk groups. It was found that the cloze test scores for individuals exposed to positive self-talk ( $M = 22.9\%$  correct) were not significantly different from the cloze test scores of individuals that practiced neutral self-talk ( $M = 31.7\%$  correct;  $p = 0.130$ ). MSEQ scores were then dichotomized based on the median score of 75. Scores were considered high ( $\geq 75$ ) or low ( $< 75$ ). A between subjects ANOVA was then conducted to evaluate whether significant interactions existed between self-talk, self-efficacy, and memory recall. The conducted ANOVA test revealed that mean cloze test scores for

participants with high self-efficacy that practiced positive self-talk ( $M=16.2\%$  correct) were significantly lower than cloze test scores for both participants with low self-efficacy that practiced positive self-talk ( $M=30.9\%$  correct;  $p=0.048$ ) and participants with high self-efficacy that practiced neutral self-talk ( $M=30.8\%$  correct;  $p=0.044$ ) (Figure 1).

**Figure 1**

*Cloze test scores grouped by treatment and self-efficacy level*



## Discussion

While this experimenter originally hypothesized that positive self-talk would impact self-efficacy, the collected data seem to suggest otherwise. Based on the data analysis, there is an interaction between positive self-talk and high self-efficacy that is in some way impeding cognitive ability. Furthermore, because self-talk had no significant impact on self-efficacy, it can be safely assumed that the recorded memory self-efficacy levels are the same levels of self-efficacy with which participants came into the experiment. One possible explanation for the

observed cognitive decline in participants with high self-efficacy is Kalyuga's Expertise Reversal Effect (2003). Learning techniques that would be effective for low knowledge individuals can actually impede learning in higher knowledge individuals. Participants with high self-efficacy can be considered "more knowledgeable" in regards to confidence and belief in their own capabilities, and they have developed schema to incorporate this knowledge. In contrast, individuals with low self-efficacy may not have such schema in place. Exposure to positive self-talk helps people with low self-efficacy create these schemas to incorporate future learning, yet it causes cognitive strain in people with high self-efficacy. Individuals with high self-efficacy that practiced neutral self-talk did not experience any cognitive strain, because the neutral statements didn't require any cognitive effort to practice.

While the internal validity and reliability for the instruments used in this experiment are strong, there are some potential sources of error. Because the experiment was conducted via Google forms, participants may not have followed all instructions in regard to time constraints. Without a presiding investigator, participants may have chosen to merely skip repeating the self-talk statements if they thought it was pointless or felt silly doing so. Additionally, the experiment relied solely on volunteer participants. Due to a combination of this and some participants pulling out of the experiment, the data suffered from both a less than ideal sample size and uneven treatment groups.

Future research would seek to further investigate the relationship between high self-efficacy, self-talk, and cognition. This research would focus on how self-confidence interacts with memory, studying what factors can increase or impede self-confidence and self-efficacy and examining the effects of self-talk over extended periods of time rather than in just a brief instant.

In doing so the investigators would hope to gain a better understanding of how self-efficacy and memory interact within the brain and to discover better practices to put in place in an academic setting to help improve student self-efficacy and cognition.

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**Appendix A**

Memory Self-Efficacy Questionnaire

**The purpose of these questions is to find out  
what you think about your own memory ability.**

**We would like to know your opinions.  
There are no right or wrong answers.**

**DIRECTIONS:**

**There are some memory tasks described on the following pages. Please put  
your responses on the MSEQ Answer Sheets.**

**If you know that you cannot do the task described, you circle the 0.**

**If you are 100% sure that you can do the task described, you circle 100.**

If you think you might be able to do it, but you are not 100% sure, your answer would fall in the middle somewhere between 10 and 90, depending on how certain you are.

Use the full scale, from 0 to 100, to show how confident you are that you can do the task described in each statement.

**EXAMPLE:**

These questions ask you about your ability to remember to do some errands for a friend who is ill. To help you answer these questions, here is a sample list of errands. This is just an example; you will not be asked to remember this list at this time.

---

|                                |                                |
|--------------------------------|--------------------------------|
| take shirt to the cleaners     | pick up prescription medicine  |
| get money at the bank          | buy some tissues               |
| buy milk                       | fill car with gas              |
| find birthday card for brother | call nurse about her condition |

---

**X-1. IF A SICK FRIEND ASKED ME TO DO 8 ERRANDS FOR HER, I COULD REMEMBER TO DO ALL 8 ERRANDS.**

| HOW CERTAIN ARE YOU THAT YOU CAN |    |    |    |    |                    |    |    |    |    |           |
|----------------------------------|----|----|----|----|--------------------|----|----|----|----|-----------|
| DO THIS? (circle a percentage)   |    |    |    |    |                    |    |    |    |    |           |
| 0                                | 10 | 20 | 30 | 40 | 50                 | 60 | 70 | 80 | 90 |           |
| 100                              |    |    |    |    |                    |    |    |    |    |           |
| I cannot                         |    |    |    |    | Moderately certain |    |    |    |    | 100% sure |

**X-2. IF A SICK FRIEND ASKED ME TO DO 8 ERRANDS FOR HER, I COULD REMEMBER TO DO 2 OF THESE ERRANDS.**

| HOW CERTAIN ARE YOU THAT YOU CAN |    |    |    |    |                    |    |    |    |    |           |
|----------------------------------|----|----|----|----|--------------------|----|----|----|----|-----------|
| DO THIS? (circle a percentage)   |    |    |    |    |                    |    |    |    |    |           |
| 0                                | 10 | 20 | 30 | 40 | 50                 | 60 | 70 | 80 | 90 |           |
| 100                              |    |    |    |    |                    |    |    |    |    |           |
| I cannot                         |    |    |    |    | Moderately certain |    |    |    |    | 100% sure |

**\*\*\*\*\*Do You Have Any Questions?\*\*\*\*\***

These questions ask you about your ability to remember where you have recently placed common household items. To help you answer these questions, there are some examples below of items that you could put away. Some time later (10-20 minutes later), you would need to find them again. These are only examples; you will not be asked to find these items at this time.

---

rubber band, scarf, scissors, notepad, thread, stapler,  
coaster, stamp, keys, matches, book, pencil, magnet,  
brush, necklace, toothbrush, comb, wallet

---

**A-1. IF I PLACED 18 COMMON EVERYDAY OBJECTS IN DIFFERENT LOCATIONS AT HOME, A FEW MINUTES LATER I COULD REMEMBER WHERE I HAD PUT ALL 18 OF THE ITEMS.**

| HOW CERTAIN ARE YOU THAT YOU CAN |    |    |    |    |                    |    |    |    |    |           |
|----------------------------------|----|----|----|----|--------------------|----|----|----|----|-----------|
| DO THIS? (circle a percentage)   |    |    |    |    |                    |    |    |    |    |           |
| 0                                | 10 | 20 | 30 | 40 | 50                 | 60 | 70 | 80 | 90 |           |
| 100                              |    |    |    |    |                    |    |    |    |    |           |
| I cannot                         |    |    |    |    | Moderately certain |    |    |    |    | 100% sure |



**A-2. IF I PLACED 18 COMMON EVERYDAY OBJECTS IN DIFFERENT LOCATIONS AT HOME, A FEW MINUTES LATER I COULD REMEMBER WHERE I HAD PUT 14 OF THE ITEMS.**

| HOW CERTAIN ARE YOU THAT YOU CAN |    |    |    |                    |    |    |    |    |           |
|----------------------------------|----|----|----|--------------------|----|----|----|----|-----------|
| DO THIS? (circle a percentage)   |    |    |    |                    |    |    |    |    |           |
| 0                                | 10 | 20 | 30 | 40                 | 50 | 60 | 70 | 80 | 90        |
| 100                              |    |    |    |                    |    |    |    |    |           |
| I cannot                         |    |    |    | Moderately certain |    |    |    |    | 100% sure |

go to next page

**A-3. IF I PLACED 18 COMMON EVERYDAY OBJECTS IN DIFFERENT LOCATIONS AT HOME, A FEW MINUTES LATER I COULD REMEMBER WHERE I HAD PUT 10 OF THE ITEMS.**

| HOW CERTAIN ARE YOU THAT YOU CAN |    |    |    |                    |    |    |    |    |           |
|----------------------------------|----|----|----|--------------------|----|----|----|----|-----------|
| DO THIS? (circle a percentage)   |    |    |    |                    |    |    |    |    |           |
| 0                                | 10 | 20 | 30 | 40                 | 50 | 60 | 70 | 80 | 90        |
| 100                              |    |    |    |                    |    |    |    |    |           |
| I cannot                         |    |    |    | Moderately certain |    |    |    |    | 100% sure |

**A-4. IF I PLACED 18 COMMON EVERYDAY OBJECTS IN DIFFERENT LOCATIONS AT HOME, A FEW MINUTES LATER I COULD REMEMBER WHERE I HAD PUT 6 OF THE ITEMS.**

| HOW CERTAIN ARE YOU THAT YOU CAN |    |    |                    |    |    |    |    |           |    |     |
|----------------------------------|----|----|--------------------|----|----|----|----|-----------|----|-----|
| DO THIS? (circle a percentage)   |    |    |                    |    |    |    |    |           |    |     |
| 0                                | 10 | 20 | 30                 | 40 | 50 | 60 | 70 | 80        | 90 | 100 |
| I cannot                         |    |    | Moderately certain |    |    |    |    | 100% sure |    |     |

**A-5. IF I PLACED 18 COMMON EVERYDAY OBJECTS IN DIFFERENT LOCATIONS AT HOME, A FEW MINUTES LATER I COULD REMEMBER WHERE I HAD PUT 2 OF THE ITEMS.**

| HOW CERTAIN ARE YOU THAT YOU CAN |    |    |                    |    |    |    |    |           |    |     |
|----------------------------------|----|----|--------------------|----|----|----|----|-----------|----|-----|
| DO THIS? (circle a percentage)   |    |    |                    |    |    |    |    |           |    |     |
| 0                                | 10 | 20 | 30                 | 40 | 50 | 60 | 70 | 80        | 90 | 100 |
| I cannot                         |    |    | Moderately certain |    |    |    |    | 100% sure |    |     |

go to next page

These questions ask you about your ability to remember a friend's shopping list. To help you answer these questions, here is a sample shopping list. This is only an example; you will not be asked to remember this list at this time.

---

cottage cheese, blueberries, rolls, bread, paper towels, peaches, napkins, tissues, milk, eggs, margarine, lunch meat, chicken,

**aspirin, peas, birthday card, t-shirt, hamburger**

---

**C-1. IF I WENT TO THE STORE THE SAME DAY, I COULD REMEMBER 18 ITEMS FROM A FRIEND'S SHOPPING LIST OF 18 ITEMS, WITHOUT USING A LIST.**

| HOW CERTAIN ARE YOU THAT YOU CAN |    |    |    |    |                    |    |    |    |           |
|----------------------------------|----|----|----|----|--------------------|----|----|----|-----------|
| DO THIS? (circle a percentage)   |    |    |    |    |                    |    |    |    |           |
| 0                                | 10 | 20 | 30 | 40 | 50                 | 60 | 70 | 80 | 90        |
| 100                              |    |    |    |    |                    |    |    |    |           |
| I cannot                         |    |    |    |    | Moderately certain |    |    |    | 100% sure |

**C-2. IF I WENT TO THE STORE THE SAME DAY, I COULD REMEMBER 14 ITEMS FROM A FRIEND'S SHOPPING LIST OF 18 ITEMS, WITHOUT USING A LIST.**

| HOW CERTAIN ARE YOU THAT YOU CAN |    |    |    |    |                    |    |    |    |           |
|----------------------------------|----|----|----|----|--------------------|----|----|----|-----------|
| DO THIS? (circle a percentage)   |    |    |    |    |                    |    |    |    |           |
| 0                                | 10 | 20 | 30 | 40 | 50                 | 60 | 70 | 80 | 90        |
| 100                              |    |    |    |    |                    |    |    |    |           |
| I cannot                         |    |    |    |    | Moderately certain |    |    |    | 100% sure |

go to next page

**C-3. IF I WENT TO THE STORE THE SAME DAY, I COULD REMEMBER 10 ITEMS FROM A FRIEND'S SHOPPING LIST OF 18 ITEMS, WITHOUT USING A LIST.**

| HOW CERTAIN ARE YOU THAT YOU CAN |    |    |    |                    |    |    |    |    |           |
|----------------------------------|----|----|----|--------------------|----|----|----|----|-----------|
| DO THIS? (circle a percentage)   |    |    |    |                    |    |    |    |    |           |
| 0                                | 10 | 20 | 30 | 40                 | 50 | 60 | 70 | 80 | 90        |
| 100                              |    |    |    |                    |    |    |    |    |           |
| I cannot                         |    |    |    | Moderately certain |    |    |    |    | 100% sure |

**C-4. IF I WENT TO THE STORE THE SAME DAY, I COULD REMEMBER 6 ITEMS FROM A FRIEND'S SHOPPING LIST OF 18 ITEMS, WITHOUT USING A LIST.**

| HOW CERTAIN ARE YOU THAT YOU CAN |    |    |    |                    |    |    |    |    |           |
|----------------------------------|----|----|----|--------------------|----|----|----|----|-----------|
| DO THIS? (circle a percentage)   |    |    |    |                    |    |    |    |    |           |
| 0                                | 10 | 20 | 30 | 40                 | 50 | 60 | 70 | 80 | 90        |
| 100                              |    |    |    |                    |    |    |    |    |           |
| I cannot                         |    |    |    | Moderately certain |    |    |    |    | 100% sure |

**C-5. IF I WENT TO THE STORE THE SAME DAY, I COULD REMEMBER 2 ITEMS FROM A FRIEND'S SHOPPING LIST OF 18 ITEMS, WITHOUT USING A LIST.**

| HOW CERTAIN ARE YOU THAT YOU CAN |    |    |    |                    |    |    |    |    |           |
|----------------------------------|----|----|----|--------------------|----|----|----|----|-----------|
| DO THIS? (circle a percentage)   |    |    |    |                    |    |    |    |    |           |
| 0                                | 10 | 20 | 30 | 40                 | 50 | 60 | 70 | 80 | 90        |
| 100                              |    |    |    |                    |    |    |    |    |           |
| I cannot                         |    |    |    | Moderately certain |    |    |    |    | 100% sure |

go to next page

These questions ask you about your ability to remember people's names. To help you answer these questions, here is a sample list of names. This is only an example; you will not be asked to remember these names at this time.

---

Melissa, James, Sarah, Derek, Rachel,  
Daniel, Karen, Patrick, Angela, Brian

---

**D-1. IF SOMEONE SHOWED ME THE PHOTOGRAPHS OF 10 PEOPLE AND TOLD ME THEIR NAMES ONCE, I COULD IDENTIFY 10 PERSONS BY NAME IF I SAW THE PICTURES AGAIN A FEW MINUTES LATER.**

| HOW CERTAIN ARE YOU THAT YOU CAN |    |    |    |                    |    |    |    |    |           |
|----------------------------------|----|----|----|--------------------|----|----|----|----|-----------|
| DO THIS? (circle a percentage)   |    |    |    |                    |    |    |    |    |           |
| 0                                | 10 | 20 | 30 | 40                 | 50 | 60 | 70 | 80 | 90        |
| 100                              |    |    |    |                    |    |    |    |    |           |
| I cannot                         |    |    |    | Moderately certain |    |    |    |    | 100% sure |

**D-2. IF SOMEONE SHOWED ME THE PHOTOGRAPHS OF 10 PEOPLE AND TOLD ME THEIR NAMES ONCE, I COULD IDENTIFY 8 PERSONS BY NAME IF I SAW THE PICTURES AGAIN A FEW MINUTES LATER.**

| HOW CERTAIN ARE YOU THAT YOU CAN |    |    |    |    |                    |    |    |    |           |
|----------------------------------|----|----|----|----|--------------------|----|----|----|-----------|
| DO THIS? (circle a percentage)   |    |    |    |    |                    |    |    |    |           |
| 0                                | 10 | 20 | 30 | 40 | 50                 | 60 | 70 | 80 | 90        |
| 100                              |    |    |    |    |                    |    |    |    |           |
| I cannot                         |    |    |    |    | Moderately certain |    |    |    | 100% sure |

go to next page

**D-3. IF SOMEONE SHOWED ME THE PHOTOGRAPHS OF 10 PEOPLE AND TOLD ME THEIR NAMES ONCE, I COULD IDENTIFY 6 PERSONS BY NAME IF I SAW THE PICTURES AGAIN A FEW MINUTES LATER.**

| HOW CERTAIN ARE YOU THAT YOU CAN |    |    |    |                    |    |    |    |    |           |
|----------------------------------|----|----|----|--------------------|----|----|----|----|-----------|
| DO THIS? (circle a percentage)   |    |    |    |                    |    |    |    |    |           |
| 0                                | 10 | 20 | 30 | 40                 | 50 | 60 | 70 | 80 | 90        |
| 100                              |    |    |    |                    |    |    |    |    |           |
| I cannot                         |    |    |    | Moderately certain |    |    |    |    | 100% sure |

**D-4. IF SOMEONE SHOWED ME THE PHOTOGRAPHS OF 10 PEOPLE AND TOLD ME THEIR NAMES ONCE, I COULD IDENTIFY 4 PERSONS BY NAME IF I SAW THE PICTURES AGAIN A FEW MINUTES LATER.**

| HOW CERTAIN ARE YOU THAT YOU CAN |    |    |    |                    |    |    |    |    |           |
|----------------------------------|----|----|----|--------------------|----|----|----|----|-----------|
| DO THIS? (circle a percentage)   |    |    |    |                    |    |    |    |    |           |
| 0                                | 10 | 20 | 30 | 40                 | 50 | 60 | 70 | 80 | 90        |
| 100                              |    |    |    |                    |    |    |    |    |           |
| I cannot                         |    |    |    | Moderately certain |    |    |    |    | 100% sure |

**D-5. IF SOMEONE SHOWED ME THE PHOTOGRAPHS OF 10 PEOPLE AND TOLD ME THEIR NAMES ONCE, I COULD IDENTIFY 2 PERSONS BY NAME IF I SAW THE PICTURES AGAIN A FEW MINUTES LATER.**

| HOW CERTAIN ARE YOU THAT YOU CAN |    |    |    |                    |    |    |    |    |           |
|----------------------------------|----|----|----|--------------------|----|----|----|----|-----------|
| DO THIS? (circle a percentage)   |    |    |    |                    |    |    |    |    |           |
| 0                                | 10 | 20 | 30 | 40                 | 50 | 60 | 70 | 80 | 90        |
| 100                              |    |    |    |                    |    |    |    |    |           |
| I cannot                         |    |    |    | Moderately certain |    |    |    |    | 100% sure |

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These questions ask you about your ability to remember the main points from a story. To help you answer these questions, here is a sample story. This is only an example; you will not be asked to remember this story at this time.

---

**Sample story:** Leroy is enjoying a holiday. He is staying with his family in Minneapolis, Minnesota. His oldest son, Arthur, works at the university there. His other son, Ronald and his family have come up from Chicago. There are five children and five adults staying in Arthur's house. Leroy is staying in the ground floor guestroom. It is a little noisy. It is, however, conveniently located near a bathroom, the kitchen, and the dining room. The four bedrooms upstairs and the extra room in the basement are enough for everyone else. It is crowded, but it's good to see the family.

---

**E-1. IF I HAD JUST READ PART OF A STORY (ABOUT 10 SENTENCES) I COULD CORRECTLY REMEMBER THE MAIN POINTS FROM ALL 10 SENTENCES.**

| HOW CERTAIN ARE YOU THAT YOU CAN |    |    |    |    |                    |    |    |    |    |           |
|----------------------------------|----|----|----|----|--------------------|----|----|----|----|-----------|
| DO THIS? (circle a percentage)   |    |    |    |    |                    |    |    |    |    |           |
| 0                                | 10 | 20 | 30 | 40 | 50                 | 60 | 70 | 80 | 90 |           |
| 100                              |    |    |    |    |                    |    |    |    |    |           |
| I cannot                         |    |    |    |    | Moderately certain |    |    |    |    | 100% sure |



**E-2. IF I HAD JUST READ PART OF A STORY (ABOUT 10 SENTENCES) I COULD CORRECTLY REMEMBER THE MAIN POINTS FROM 8 SENTENCES.**

| HOW CERTAIN ARE YOU THAT YOU CAN |    |    |    |    |                    |    |    |    |    |           |
|----------------------------------|----|----|----|----|--------------------|----|----|----|----|-----------|
| DO THIS? (circle a percentage)   |    |    |    |    |                    |    |    |    |    |           |
| 0                                | 10 | 20 | 30 | 40 | 50                 | 60 | 70 | 80 | 90 |           |
| 100                              |    |    |    |    |                    |    |    |    |    |           |
| I cannot                         |    |    |    |    | Moderately certain |    |    |    |    | 100% sure |

go to next page

**E-3. IF I HAD JUST READ PART OF A STORY (ABOUT 10 SENTENCES) I COULD CORRECTLY REMEMBER THE MAIN POINTS FROM 6 SENTENCES.**

| HOW CERTAIN ARE YOU THAT YOU CAN |    |    |    |    |                    |    |    |    |    |           |
|----------------------------------|----|----|----|----|--------------------|----|----|----|----|-----------|
| DO THIS? (circle a percentage)   |    |    |    |    |                    |    |    |    |    |           |
| 0                                | 10 | 20 | 30 | 40 | 50                 | 60 | 70 | 80 | 90 |           |
| 100                              |    |    |    |    |                    |    |    |    |    |           |
| I cannot                         |    |    |    |    | Moderately certain |    |    |    |    | 100% sure |

**E-4. IF I HAD JUST READ PART OF A STORY (ABOUT 10 SENTENCES) I COULD CORRECTLY REMEMBER THE MAIN POINTS FROM 4 SENTENCES.**

| HOW CERTAIN ARE YOU THAT YOU CAN |    |    |    |                    |    |    |    |    |           |
|----------------------------------|----|----|----|--------------------|----|----|----|----|-----------|
| DO THIS? (circle a percentage)   |    |    |    |                    |    |    |    |    |           |
| 0                                | 10 | 20 | 30 | 40                 | 50 | 60 | 70 | 80 | 90        |
| 100                              |    |    |    |                    |    |    |    |    |           |
| I cannot                         |    |    |    | Moderately certain |    |    |    |    | 100% sure |

**E-5. IF I HAD JUST READ PART OF A STORY (ABOUT 10 SENTENCES) I COULD CORRECTLY REMEMBER THE MAIN POINTS FROM 2 SENTENCES.**

| HOW CERTAIN ARE YOU THAT YOU CAN |    |    |    |                    |    |    |    |    |           |
|----------------------------------|----|----|----|--------------------|----|----|----|----|-----------|
| DO THIS? (circle a percentage)   |    |    |    |                    |    |    |    |    |           |
| 0                                | 10 | 20 | 30 | 40                 | 50 | 60 | 70 | 80 | 90        |
| 100                              |    |    |    |                    |    |    |    |    |           |
| I cannot                         |    |    |    | Moderately certain |    |    |    |    | 100% sure |

*Please reach the end of the list, start over from the beginning.*

I am successful

I am motivated

I am gifted

I am confident

I am hard-working

## **Appendix C**

### Neutral Self-Talk Statements

*Please silently repeat the following statements to yourself until you are told to stop. When you reach the end of the list, start over from the beginning.*

I am wearing shoes

I am in a classroom

I am sitting

I am a person

I am awake

**Appendix D**

## Reading Passage

*Please read and study the following passage until you are instructed to stop. Pay special attention to it as you will be briefly tested on it afterwards.*

Should we really care for the greatest actors of the past? Could we have them before us? Should we find them too different from our accent of thought, of feeling, of speech, in a thousand minute particulars which are of the essence of all three? Dr. Doran's long and interesting records of the triumphs of Garrick, and other less familiar, but in their day hardly less astonishing players, do not relieve one of the doubt. Garrick himself, as sometimes happens with people who have been the subject of much anecdote and other conversation, here as elsewhere, bears no very distinct figure. One hardly sees the wood for the trees. On the other hand, the account of Betterton, "perhaps the greatest of English actors," is delightfully fresh. That intimate friend of Dryden, Tillatson, Pope, who executed a copy of the actor's portrait by Kneller which is still extant, was worthy of their friendship; his career brings out the best elements in stage life. The stage in these volumes presents itself indeed not merely as a mirror of life, but as an illustration of the utmost intensity of life, in the fortunes and characters of the players. Ups and downs, generosity, dark fates, the most delicate goodness, have nowhere been more prominent than in the private existence of those devoted to the public mimicry of men and women. Contact with the stage,

almost throughout its history, presents itself as a kind of touchstone, to bring out the bizarrerie, the theatrical tricks and contrasts, of the actual world.

## Appendix E

### Cloze Test

#### Reading Passage

Should we really care for the greatest 1.\_\_\_\_ of the past? Could we have them before us? Should we find them too different from our accent of thought, of feeling, of speech, in a thousand minute particulars which are of the essence of all three? Dr. Doran's long and interesting records of the triumphs of 2.\_\_\_\_, and other less familiar, but in their day hardly less astonishing, players, do not relieve one of the doubt. Garrick himself, as sometimes happens with 3.\_\_\_\_ who have been the subject of much 4.\_\_\_\_ and other conversation, here as elsewhere, bears no very distinct figure. One hardly sees the wood for the trees. On the other hand, the account of 5.\_\_\_\_, "perhaps the greatest of English actors," is delightfully fresh. That intimate friend of Dryden, Tillatson, 6.\_\_\_\_, who executed a copy of the actor's portrait by 7.\_\_\_\_ which is still extant, was worthy of their friendship; his career brings out the best elements in stage life. The stage in these volumes presents itself indeed not merely as a 8.\_\_\_\_ of life, but as an illustration of the utmost intensity of life, in the fortunes and 9.\_\_\_\_ of the players. Ups and downs, generosity, dark fates, the most delicate goodness, have nowhere been more prominent than in the private existence of those devoted to the public mimicry of men and women. Contact with the 10.\_\_\_\_, almost throughout its history, presents itself as a kind of touchstone, to bring out the bizarrerie, the theatrical tricks and contrasts, of the actual world.

